DOCUMENT RESUME

ED 351 703 CS 213 606

AUTHOR Lovely, Deborah
TITLE Darwin's Natural Selection in the Classroom.
PUB DATE Mar 92
NOTE 11p.; Paper presented at the Annual Meeting of the College English Association (23rd, Pittsburgh, PA, March 27-29, 1992).
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Speeches/Conference Papers (150) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College English; Critical Reading; *Evolution; Higher Education; *Language Usage; Literary Styles; Rhetorical Criticism; *Written Language
IDENTIFIERS Close Reading Approach; *Darwin (Charles); Historical Background; Natural Selection; Rhetorical Strategies

ABSTRACT

Resuscitating Charles Darwin's language from historians' emphatic denigration of the written word serves as an example to demonstrate what the English discipline can accomplish in recovering cultural heritage. Michael Ghiselin, an evolutionary anatomist, suggests that scholars must concentrate on the ideas, not the language, Darwin employed. Yet if words are separated from ideas, expression from content, then too much of the intellectual heritage is lost. A close analysis of chapter six of "The Origin of Species" indicates that Darwin's controversial use of the phrase "survival of the fittest" comes from an ongoing sense that the war of nature remains the dark side of its advancement. Darwin was caught in a Victorian oscillation between yearning for progress at least toward perfection, if not to actually attaining it, and fearing destruction. His adopting "survival of the fittest" for natural selection comes as an open admission of that felt tension between destruction and advancement. Employing English department methods of close reading skills on Darwin's thought establishes a fairly standard English department point: How people articulate their thoughts not only influences how others accept their views but also provides a strong indicator of what those thoughts were before being refined or discarded by subsequent thinkers. (One figure listing variations in the use of the term "perfection" in chapter six of "The Origin of Species" is attached.) (RS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Deborah Lovely

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Deborah Lovely
Penn State Altoona Campus
Altoona, PA 16601-3760
(814) 684-2923 (home)
(814) 949-5286 (work)

ED357703

Darwin's Natural Selection in the Classroom

I intend my title, "Darwin's Natural Selection in the Classroom" to be a pun. Natural Selection is, of course, the mechanism Darwin discovered for evolutionary change, and my pun aims at encouraging Darwin's work for English Department studies. My reason for such encouragement comes from a fairly recent discovery on my part that even within the humanities there exists an emphatic denigration of the written word. Certainly we English Department folk have a healthy skepticism toward the written and spoken word; still we assume that careful attention to language reveals intent. What I have recently found is that historians of the 1960's and 1980's, and perhaps into the 1990's, frequently distrust language to the extent that they will dismiss it altogether. My pun on "natural selection" comes, therefore, as a quick attempt to resuscitate Darwin's language and to emphasize what English Department study can supply in analyzing Darwin's thought.

To do so let me report briefly on a history from 1969 titled The Triumph of the Darwinian Method. I admit that on the surface I have seemed to stack the deck here against the historians because the author of this history is not really an historian but an evolutionary anatomist. Still, the author in question, Michael Ghiselin, somewhat arrogantly announces in his 1984 reissue that his book has "turned out to be a seminal document in the 'new' Darwin scholarship" (xi). And the project for his book was in 1969 as well as in the 1984 reissue to annex history to the natural sciences. "Like geology, history is a strictly objective branch of natural science and deserves to be treated in that spirit" (xvii). His may be an extreme view of history, but as such he

CS213606

BEST COPY AVAILABLE

seems more willing than most to articulate his assumptions, and so Ghiselin's work proves useful for establishing departmental biases.

For an example of his announced assumptions toward Darwin's language, notice Ghiselin's answer to intellectual historians accusing Darwin of hypocrisy in claiming to learn something from Malthus.

> The answer . . . is to abandon the study of words
> and to derive our understanding from concepts.
>
> (75)

After this announcement a third of the way through his presentation, Ghiselin asserts two-thirds through that

> [t]he practicing scientist learns to structure
> his thought upon a more abstractive, theoretical level,
> and uses the natural language only for communication.
>
> (158-159)

In his conclusion, then, Ghiselin emphasizes that we must concentrate on the "ideas, not language" Darwin employed and that Darwin "preferred not to state, but to render his ideas" (240-242).

As part of an English department, I cannot accept that we can fruitfully separate Darwin's "words" from his "concepts," "theoretical" thought from "communication," or even "stat[ing] from render[ing]" ideas. My suspicion remains that Ghiselin has been frustrated by semantic games, the logical and definitional conundrums that thwart intellectual understanding and development, but though I sympathize with his frustrations, I cannot accept his conclusions. If we separate words from ideas, expression from content, then we lose too much of our intellectual heritage, too much of our ability to reconstruct accurately the thinking and thought of one of the admittedly most formative figures of our century. Especially because Darwin has so shaped our

century, we have a tremendous urge to modernize his thought and dismiss his language as erroneous, hasty, or illconceived.

Take for example the intellectual handwringing over Darwin's adopting Spencer's "survival of the fittest" to replace "natural selection" as a description for the mechanism of evolutionary change. J. W. Burrow refers to Darwin's having "only later rather unwisely adopted Spencer's phrase" (33), and Gavin de Beer remarks "it is regrettable that Darwin in later years allowed himself to be persuaded to accept Herbert Spencer's inappropriate expression . . . . It was not the first (or last) time that so-called philosophers of science have encumbered scientists with their help" (573).

As an English department person, I believe I can explain what led Darwin to such a pass. I suspect that this instance of adopting Spencer's phrase comes from more than a lapse in judgment and even from more than exhaustion brought on by meeting ongoing criticism of The Origin of Species. One clue emerges from a detailed study of Chapter 6, "Difficulties on Theory." In this 27 page chapter, some reference to "perfect," "perfected," or "perfection" comes on average little under twice per page. Only 9 pages are bereft of such terms, and some pages hold half a dozen such references. The terms shift their meanings, however, and so we need to look to the context to establish each particular meaning. From context, I discover four major groupings. Perfection can be an absolute; it can be a standard or measure; it can provide a comparison; and it can demonstrate high appreciation.

A check with the OED confirms such definitions available in the mid 1800s. It, of course, adds the botanical definition of "perfect" for flowers containing both male and female parts in a single flower. For my purposes, however, most important is that perfect exists in a comparative sense. I might add that though we now tend to think of perfect as an absolute, it still

retains its comparative sense, as the American Heritage Dictionary cautions, for such forms as "more perfect than" and "less perfect than." This contemporary usage continues what was even more established in Darwin's time and the comparative sense supports both the absolute and standard or measure categories for the term "perfect" by allowing distinctions to be made.

Given that Darwin held varying meanings for the term "perfect," the next question becomes one of intent. Was Darwin using such terms of perfection as a rhetorical ploy or concession to creationist opponents who were insisting on God's "perfect" creation?

Passages such as the famous comparison of the eye to the telescope suggest such an intent, and therefore provide the greatest challenge to my thesis of an ongoing pattern to Darwin's thought rather than a set piece aimed solely at persuading opponents.

> We know that this instrument [the telescope] has been perfected by the long continued efforts of the highest human intellects; and we naturally infer that the eye has been formed by a somewhat analogous process.
>
> (219)

"Has been perfected" seems to bridge the categories of standard or measure and absolute. This present perfect passive allows Darwin to emphasize the process of past action continuing into the present without an active agent to instigate that action or continue it. By verb form alone Darwin has undercut Creationist claims for God's instantaneous and perfect creation and catastrophist claims for intervals of creation and destruction.

The series of rhetorical questions immediately following show Darwin employing strategies aimed at undercutting any with the hubris to make the human mind analogous to God's power of creation, as George Levine points out.

> But may not this inference be presumptuous? Have we any right to assume that the Creator works by intellectual powers like those of man? . . .[M]ay we not believe that a living optical instrument might thus be formed as superior to one of glass, as the works of the Creator are to those of man?
>
> (219)

These rhetorical questions challenge Creationists by embarrassing them, and so this set piece does immediately suggest that "perfect" operates as a ploy to both engage and deflect their criticisms.

Note, however, the following excerpt from between the second and third rhetorical questions given above.

> We must suppose each new state of the instrument to be multiplied by the million; and each to be preserved till a <u>better</u> be produced, and then the old ones are destroyed . . . [N]atural selection will pick out with unerring skill each <u>improvement</u> [emphases mine].
>
> (219)

"Improvement" here refers not just to increasing complexity, though it certainly does so as well. It also refers to advancement, bettering, progress, perfecting. Even in this set piece, Darwin describes natural selection in such terms.

Darwin's later adopting "survival of the fittest" I believe comes from an ongoing sense that the war of nature remains the dark side of its advancement. Darwin was caught in a Victorian oscillation between yearning for progress at least toward perfection, if not attaining it, and fearing destruction. His theory of natural selection emphasizes, of course, reproduction. That he would give up such an appropriate term for describing the mechanism of evolution in favor of the now despised "survival of the

fittest" makes some intellectual sense for subsequent work once this typology for "perfection" becomes evident as a pattern in Darwin's thought.

In trying to rescue Darwin from the unfortunate "survival of the fittest," J. W. Burrow remarks that Darwin wrote in his copy of The Vestiges of Creation "Never use the words higher and lower," and he further cites Darwin from The Origin of Species: "I believe . . . in no law of necessary development" (33 & 348). Certainly I agree with Burrow that Darwin accorded natural selection no teleological purpose. But "survival of the fittest" need not be teleological any more than the catastrophists require supernatural forces for their theory, as Loren Eiseley points out (115). The phrase is of course tautological, as de Beer frets. "Who survive? The Fittest. Which are the fittest? Those, who survive" (573). But their frustration with Darwin prevents them from seeing why Darwin would adopt such a phrase.

Darwin did so quite simply because he believes increasing complexity to be improvement. On page 217 he compares "perfect and complex" to "imperfect and simple." He has faithfully eschewed "higher and lower," but he cannot avoid developmental progress and accurately describe living beings.

Eiseley argues that evolution, previously known as developmentalism, came from merging progressionism with uniformitarianism through the principle of natural selection (354). His assessment leaves out, however, an ongoing tension evident in The Origin of Species, a tension between destruction and advancement. Victorian progress holds that same tension. Caught between eighteenth century notions of illimitable progress and twentieth century suspicions of any progress, Victorian progress held up the banner of advancement while constantly fearing destruction. Darwin's emphasis on "perfection" in Chapter 6 displays the same anxiety toward this constant

tension. His adopting "survival of the fittest" for natural selection comes as an open admission of that felt tension between destruction and advancement.

Stanley Edgar Hyman tells us that Darwin decided early in life "not to theorize after sixty, since he had seen so many scientists make old fools of themselves" (17). Rather than lament Darwin's adopting the now discredited phrase "survival of the fittest," I believe we can best understand Darwin's thought by understanding why he would find that phrase apt for so important a concept as natural selection.

In doing so, I employ English department methods of close reading skills to establish a fairly standard English department point. How people articulate their thoughts not only influences how others accept their views but also provides a strong indicator of precisely what those thoughts were before being refined or discarded by subsequent generations and their thinkers. Darwin here has served simply as an example to demonstrate what our specifically English discipline can accomplish in recovering our cultural heritage.

Absolute

inimitable perfection p. 205
absolutely perfect (subtitle)
perfect so-called 213
perfect power 214
perfectly winged 214
perfect & complex 217
had been perfected 218
has been perfected 218
perfect and complex 224
absolute perfection 229
that most perfect 229
as perfect [to be perfect] 230
so perfect as 231
absolute perfection 233
absolute perfection 233

Standard/Measure

extreme perfection (subtitle)
imperfection 206
perfectly defined 208
extremely imperfect 211
supplanted by the very process
of perfection 214
high stage of perfection 214
extreme perfection 217
moderately high stage of perfection 218
imperfectly given 218
as perfect as 218
as perfect as 219
has been perfected 219
modified and perfected 220
slowly perfected 225
degree of perfection 229
not to be perfect 229
less perfect 230
not perfected 230
degree of perfection 231
having been perfected 232
perfection ... only according to the
standard 232
standard of perfection 233

Comparative

formation & perfection 206
incomparably less
perfect 206
converted & perfected 209
less perfectly 213
imperfect & simple 217
imperfect vitreous substance 218
as perfect as 229
slightly more perfect than 229
perfect ... compared 229
as equally perfect 230

Appreciation

highly perfected 214

from "Difficulties on Theory," (205-233)

BEST COPY AVAILABLE

Works Cited

J.W. Burrow, editor. The Origin of Species by Means of Natural Selection. Charles Darwin. Penguin, London. 1968, rpt. 1987.

Gavin de Beer. "Charles Robert Darwin," Scientific Biography. Charles Gillispie, ed. Vol. 3 (565-577) Scribner, N.Y. 1971.

Loren Eiseley. Darwin's Century: Evolution and the Men Who Discovered It. Doubleday and Co., Inc. Garden City, N.Y. 1958, rpt. Anchor 1961.

Michael Ghiselin. The Triumph of the Darwinian Method. University of California, Berkeley, 1969. rpt. University of Chicago, Chicago and London 1984.

Walter Houghton. The Victorian Frame of Mind. Yale University Press, New Haven and London. 1957, rpt. 1975.

Stanley Edger Hyman, editor. Darwin for Today. Viking, N.Y. 1963, rpt. Viking Compass 1969.

George Levine. "Darwin and the Problem of Authority," Raritan 3 (1984) 30-61.